Consequences of Teen Parenthood:
Differences between Teen Moms and Teen Dads in Canada

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Abstract
A large body of work dedicated to studying the consequences of teenage motherhood has developed since the 1970s. Teen motherhood has been found to be associated with a variety of adverse consequences. However, the experience of parenthood is highly gendered, suggesting that the consequences of teenage parenthood might be different for teen moms and teen dads. Moreover, the consequences of an "off-time" or early transition to parenthood might be different for more recent cohorts of Canadians as the prevalence of teen parenthood has decreased, and as the transition to parenthood in the population has been delayed. We use the 2011 General Social Survey and propensity score weighting techniques to examine a variety of consequences of teen parenthood for young women and men, and whether teen parenthood has different consequences for teen moms and dads in a contemporary cohort of Canadians. Preliminary results suggest that experiencing early parenthood is equally detrimental for moms and dads in terms of education, life satisfaction, and family behaviours, but there are greater adverse consequences for teen moms in terms of income and self-rated health. The findings highlight the importance of considering both teen moms and teen dads in family programs and policies.

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Extended Abstract
Motivation
A large body of work dedicated to studying the consequences of teenage motherhood has developed since the 1970s (e.g. Furstenberg, 1976; Hoffman, Foster & Furstenberg, 1993). Much of this research has found that teen motherhood is associated with a wide variety of disadvantages including lower levels of education (Waite & Moore, 1978), lower income and an increased reliance on social assistance (Chevalier & Viitanen, 20030), weak attachment to the labor force, union instability and turbulent union trajectories, larger family sizes, poor psychological adjustment and life satisfaction, and poorer health outcomes (Bissell, 2000; Furstenberg, 1976).

More recent research has built off these foundational studies in two ways. First, longitudinal studies of teen mothers suggest that some of the disadvantages they experience immediately following their transition to teen motherhood are mitigated over the life course. Indeed, the long-term disadvantages associated with teen motherhood are much less dramatic that the more immediate consequences (Chevalier & Viitanen, 2003; Furstenberg et al., 1987).

Second, studies began to take seriously the issue of selection into teen motherhood and the possibility that the disadvantages that teen mothers face may be partly due to other background factors that make young women both more likely to become teen mothers and more likely to have lower educational and occupational attainment among other less advantageous outcomes. These studies tend to use one of four methods to adjust for selection and to isolate the causal effect of teen motherhood including using matched samples (e.g. Card & Wise, 1978), instrumental variables (e.g. Chevalier & Viitanen, 2003), sister fixed-effects (e.g. Geronimus & Korenman, 1992), or a variety of propensity-score weighting methods (e.g. Diaz & Fiel, 2016; Lee, 2010). These studies find that much of the association between teen motherhood and detrimental outcomes is due to confounding factors rather than teen motherhood per se (e.g. Stange, 2011), but that a causal effect of teen motherhood remains for many outcomes (Kane, Morgan, Mullan Harris & Guilkey, 2013; Lee, 2010).

However, the vast majority of past research on teen parenthood has focused exclusively on teen mothers and very little is known about the consequences of teen parenthood for fathers. This is a significant gap in our knowledge, given that parenthood is a very gendered social role (Sanchez & Thomson, 1997). Women are more likely to be primary caregivers of young children, and this is especially true when the parents are not living together, which is common among teen parents. Women are also the ones who physically carry and birth the child, which may result in adverse consequences not experienced by men such as interrupted schooling and labour market participation. Indeed, two studies that have examined the consequences of teen parenthood for men have found that teen fathers face fewer and less extreme consequences than teen mothers (Card & Wise, 1978; Winquist, Moore, Morrison, Brown & Myers, 1992).

Yet, these limited studies on the consequences of teen parenthood for fathers are quite dated and the landscape of teen parenthood has changed in the last 30 years, which suggests that effect of teen parenthood for either mothers or fathers may be different among recent cohorts. First, teen parenthood has become much less common in Canada and other Western countries. In 1993, 6.1 percent of Canadian births were to mothers younger than 20 and this declined to 3.1 percent of

births in 2013 (Statistics Canada, 2016). It is possible that off-time parenthood is more detrimental the more unusual it is, partly due to increased stigma. Relatedly, first births have generally been delayed in Canada over the past 30 years. In 1993, 39.7 percent of births were to women aged 30 or older, compared to 54.4 percent of births in 2013 (Statistics Canada, 2016). Delaying the transition to parenthood is associated with a variety of positive outcomes (e.g. Leung, Groes, Santaeulalia-Llopis, 2016). As the population delays childbearing on average, the gap between teen parents and non-teen parents, who are increasingly older, may be wider than in the past. Second, the sustained public interest in the consequences of teen pregnancy has resulted in the implementation of a variety of social programs aimed at reducing the disadvantages experienced by teen mothers. These programs may have been effective at mitigating the risks of teen parenthood for recent cohorts of teen mothers, suggesting that teen mothers and fathers may face similar challenges and experience similar outcomes.

This paper seeks to address this gap in the research literature by examining the consequences of teen parenthood for women and men in a recent Canadian cohort, and whether the disadvantages associated with teen parenthood depend on the gender of the parent. Measures of human capital, health and well-being, and family experiences at ages 30 to 49 are analyzed. Inverse-probability weights are used to account for selection into teen parenthood.

Research Questions

1. Is teen parenthood causally associated with the following outcomes?
   a. **Human capital**: Educational attainment and income
   b. **Health and wellbeing**: Self-reported health and life satisfaction
   c. **Family behaviors**: Number of romantic co-residential unions and number of children
2. Are the effects of teen parenthood on these outcomes the same for teen mothers and teen fathers?

Data
We use the 2011 Canadian General Social Survey (GSS), which is a cross-sectional survey conducted by Statistics Canada every year since 1985 with a specific thematic focus each year. The data for this study come from Cycle 25, the fifth and most recent GSS to focus on families. The GSS uses a stratified sample and is representative of non-institutionalized people aged 15 and older living in the 10 Canadian provinces. The 2011 GSS includes detailed retrospective fertility histories, union histories, and information on educational attainment, income, health, and life satisfaction and is therefore ideal for this study.

We restrict our sample to respondents who were between the ages of 30 and 49 at the time of the survey. These respondents were born between 1962 and 1981 and if they were teen parents, their children were born between 1977 and 2000. We exclude respondents who were younger than age 30 from our sample because we are interested in the longer-term effect of teen parenthood on the lives of parents, rather than the short-term effects that may reflect more acute disruptions in schooling and work while caring for the child. We exclude respondents older than 49 in order to focus on teen births among a more recent cohort. These sample restrictions result in a sample of 7,090 respondents, 5.26 percent of which became parents as teens (n=373).

Methods
We use a variety of modelling strategies that are appropriate for each of the dependent variables included in the preliminary analyses we have conducted. Educational attainment in measured using two dichotomous variables. The first education measure represents whether the respondent has graduated high school or not, and the second whether the respondent has gone on to any postsecondary education. We use logistic regression to model these outcomes. Income, self-reported health, life satisfaction, number of children, and number of coresidential romantic unions are all measured either continuously or on a five- to ten-point likert scale and we model the relationship between teen parenthood and these outcomes using OLS.

The analyses use propensity score weighting techniques, which apply the logic of experimental research designs to observational data and attempts to remove selection bias by using observed background factors to predict the probability of experiencing the treatment condition (teen parenthood). We use measures of family structure experienced in childhood, parental education, immigration and visible minority status, religiosity, language, province, urban/rural residence, and early home leaving to construct propensity weights that model the predicted probability, or propensity score, of experiencing the teen parenthood. These scores are then used to weight each respondent by the inverse of their propensity to experience the teen parenthood. This process mitigates selection bias and allows for the estimated relationship between the treatment condition and the outcome to be interpreted as causal because any differences between the treatment and control groups in terms of observed pre-treatment factors have been equalized by the weights (Austin & Stuart, 2015).

Preliminary Results
Below are the preliminary results from a series of logistic and OLS models examining the relationship between teen parenthood and the various outcomes. Each of these preliminary models includes an indicator for teen parenthood status, gender, and an interaction term testing whether the effect of teen parenthood on the outcome depends on gender. All models control for age, and include inverse-probability of treatment weights to account for selection into teen parenthood.

Table 1. Odds ratios from logistic regression models predicting high school graduation, and postsecondary education attendance. Canadians aged 30-49

	Model 1	Model 2
	High School Graduation	**Any Postsecondary**
Teen Parent	0.25 ***	0.22 ***
Not teen parent (ref.)		
Female	2.09 ***	1.51 ***
Male (ref.)		
Teen Parent * Female	0.53	0.97
Age	0.98	0.96 ***
Constant	26.83	18.56

+ p<0.10; * p<0.05; ** p<0.01; *** p<0.001

Source: 2011 General Social Survey

Table 1 shows that teen parents are significantly less likely to graduate high school or to continue to postsecondary education. In both Models 1 and 2, women are more likely to achieve the educational markers. The effect of teen parenthood on high school graduation and continuing to postsecondary education is the same for teen moms and dads.

Table 2. Estimates from OLS regression model predicting income. Canadians aged 30-49

	Model 3
	Income
Teen Parent	-0.57
Not teen parent (ref.)	
Female	-1.85 ***
Male (ref.)	
Teen Parent * Female	-0.87 +
Age	0.03 ***
Constant	9.04

+ p<0.10; * p<0.05; ** p<0.01; *** p<0.001

Source: 2011 General Social Survey

Table 2 shows that by ages 30 to 49, there are no significant income differences between men who became parents in their teens compared to men who did not. Women make significantly less

on average than men, and the effect of being a teen parent on income is marginally significant for women.

Table 3. Estimates from OLS models predicting life satisfaction and self-rated health. Canadians aged 30-49

	Model 4	Model 5
	Life Satisfaction	**Self-Rated Health**
Teen Parent	-0.15	-0.19
Not teen parent (ref.)		
Female	0.14 ***	0.01
Male (ref.)		
Teen Parent * Female	-0.22	-0.31 +
Age	-0.01 ***	-0.01 ***
Constant	8.41	4.16

+ p<0.10; * p<0.05; ** p<0.01; *** p<0.001

Source: 2011 General Social Survey

Table 3 shows there are no significant differences in the level of life satisfaction between Canadians who were teen parents and those who were not teen parents, and this is true for both men and women. Men who became parents as teens report similar levels of self-rated health as men who were not teen fathers. Teen mothers on the other hand report slightly and marginally statistically significantly lower levels of self-rated health than women who were not parents as teens.

Table 4. Estimates from OLS models predicting number of children and number of coresidential romantic unions. Canadians aged 30-49

	Model 6	Model 7
	Number of children	**Number of Unions**
Teen Parent	0.66 **	0.62 **
Not teen parent (ref.)		
Female	-0.16	0.01
Male (ref.)		
Teen Parent * Female	0.16	-0.32
Age	0.04 *	0.12 ***
Constant	0.49	0.69

+ p<0.10; * p<0.05; ** p<0.01; *** p<0.001

Source: 2011 General Social Survey

Table 4 shows that between ages 30 and 49, teen parents have more children and have experienced more relationship transitions than Canadians who did not have a child in their teens. This effect is the same for teen moms and dads.

Next Steps
The next step in this project is to model the various outcomes in a more sophisticated way and to conduct a series of sensitivity analyses to ensure our specification of the propensity weights are appropriate. We will also be building upon these initial models to include more covariates, which will make these models doubly robust, in that confounders of the relationship between teen parenthood and the outcomes will be controlled in both the outcome model and the propensity weighting model. We will also be situating our study more firmly in the life course theoretical framework and elucidating the potential mechanisms that may be operating between teen parenthood and the various outcomes, and how these mechanisms may operate differently for men and women. These next steps will be completed by PAA 2019.

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